



Digital Multimedia Cervical Cancer Kiosks for Latinas

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Abbreviated Abstract

Despite a national decline in cervical cancer rates, the incidence and mortality rates for Latinas remain high. Latina rates for invasive cervical cancer are almost twice those of other women regardless of stage of the disease. Latinas also are more likely than other women to be diagnosed at an advanced stage of the disease, due to relatively low screening rates. Healthy People 2010 sets a 90% screening rate as a national goal for having had a Pap test within the past 3 years, but only 71% of Latinas meet that standard. The long-term goal of this study is to develop a cervical cancer education intervention for low-income, low-literacy Latinas, to increase Pap screening and risk reduction behaviors among this segment of women in the U.S. This intervention will leverage digital video and flat-screen technologies to create compact, mobile, reliable, and cost-accessible next-generation kiosks. A total of 900 low-income Latinas will be accrued at one rural and two urban community clinics in California. Study participants will be randomly assigned to either an experimental or control condition in equal numbers after they are administered a pretest. A posttest will be administered 6 months from baseline to assess intervention effects among study participants.

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Total Budget

\$1,169,016

Research Objectives

AIMS

1. Develop culturally and linguistically appropriate cervical cancer screening and risk reduction information designed for low-income, low-literacy Latinas.
2. Develop multimedia kiosks that incorporate state-of-the-art digital video and flat-screen technologies to deliver interactive cervical cancer screening and risk reduction information through a touchscreen interface.
3. Evaluate the efficacy of an interactive, multimedia kiosk intervention to increase awareness of cervical cancer risk and promote screening and risk reduction behaviors among low-income, low-literacy Latinas.
4. Evaluate the acceptance of the interactive, multimedia kiosk by low-income, low-literacy Latinas receiving the intervention.

Theory/Hypothesis

Theoretical Framework: This research examines the efficacy of a cancer education intervention predicated on Bandura's self-efficacy theory, which posits that new behaviors are learned and adopted when the learner (a) feels capable of performing the required behavior (efficacy expectations) and (b) believes that the new behavior will lead to specific outcomes (outcome expectations). The design of this communication intervention relies on familiar and credible sources (social models) that attest that the 'prescribed' behavior is indeed achievable and beneficial. This theoretical framework is appropriate for a communication intervention designed for a population with notable knowledge and attitudinal barriers, low screening rates, and higher cancer mortality because it addresses the cognitive and behavioral dimensions of a screening promotion intervention. It is also particularly appropriate for a low-income and underserved population because it accounts for perceptions of capacity and opportunity to perform the desired screening behaviors.

Hypotheses: This study examines the efficacy of a multimedia cervical cancer education intervention designed for low-income, low-literacy Latinas. The hypotheses that will be examined are:

- H₁ participants exposed to the multimedia education intervention will have higher Pap screening rates 6 months from baseline compared to control group participants.
- H₂ participants exposed to the multimedia education intervention will experience greater cervical cancer knowledge gains compared to control group participants.
- H₃ participants exposed to the multimedia education intervention will have a greater sense of self-efficacy compared to control group participants.
- H₄ participants exposed to the multimedia education intervention will demonstrate more positive changes in attitude toward cervical cancer screening and risk reduction behavior compared to control group participants.



Experimental Design

The study employed a randomized, pretest and posttest, control-group experimental design. Participants completed a pretest on a kiosk, which then randomly assigned the respondent to either the treatment or control condition. Participants in the control group received a cervical cancer brochure and left. Participants in the treatment group remained and were exposed to a cervical cancer education intervention through the touchscreen kiosks. At the end of the session, an exit screen on the kiosks queried participants about their thoughts and perceptions of the kiosk. Six months from baseline, a posttest was administered to both treatment and control groups.

Final Sample Size & Study Demographics

We recruited 727 low-income Latino women in community clinics in the San Francisco Bay Area, the Central Valley, and the Los Angeles Basin in California. The average age of study participants was 39.1 years, 73.3% were Spanish-dominant, 79.5% were foreign born, 73.7% had lived in the U.S. over 6 years, 49.3% had a regular doctor, 52.3% had some form of health insurance, 77.2% had 6 or more years of formal education, 21.3% were single while 43.5% were married, and they had an average of 3.3 children.

Data Collection Methods

Pretest and posttest data collected electronically through kiosks, a posttest telephone interview

Outcome Measures

Outcome measures for gauging intervention efficacy are (a) knowledge gains, (b) attitudinal change, and (c) screening behavior. Scales used in the Pathfinder cancer studies conducted by a team at the UCSF Comprehensive Cancer Center were adapted for the present study.

Evaluation Methods

Change scores were compared for those in the treatment and control groups.

Research Results

Study participants experienced significant knowledge gains, attitude change, self-efficacy gains, and improved screening behavior. Overall knowledge gains ranged in significance from the <0.0001 to <0.001 level. Attitude change significance ranged from 0.05 (never thought of getting a Pap) and 0.04 (it's fate if a woman gets cervical cancer) to 0.27 (there's nothing you can do to prevent cervical cancer). Self-efficacy scores were nominally significant at the 0.08 level (every woman should get a Pap smear). Differences in screening behavior between intervention and control groups were not significant ($p=0.35$); nevertheless, the kiosk intervention itself was found to be significant as the primary reason for getting a Pap test ($p=0.045$). Moreover, information presented through the kiosk was attributed to be what especially influenced the decision to get a Pap test ($p=0.0002$). Notably, 28.6% of women in the control group who obtained a Pap test explicitly attributed their screening decision to the kiosk. This suggests that the mere exposure to the on-screen pretest via the kiosk was sufficient to motivate screening behavior by these women.

Barriers & Solutions

No major problems encountered

Product(s) Developed from This Research

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